



User's Manual (English)

LMI Series

Pure Sine Wave Inverter

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Important Safety Information

WARNING: Before installing and using the Inverter, you need to read the following safety information carefully.

1. General Safety Precautions

- Do not expose the Inverter to rain, snow, spray or dust. To reduce risk of hazard, do not cover or obstruct the ventilation openings. Do not install the Inverter in a zero-clearance compartment. Over heating may result.
- To avoid risk of fire and electronic shock, make sure that existing wiring is in good Electrical condition; and that wire gauge is not under sized. Do not operate the Inverter with damaged or substandard wiring.
- This equipment contains components which can produce arcing or sparks. To prevent the fire or explosion do not install this equipment in rooms containing batteries or flammable materials or in locations which require ignition protected equipment. This includes any space containing gasoline-powered machinery, fuel tanks, or joints, fittings, or other connection between components of a fuel system.

2. Precautions When Working with Batteries

- If battery acid gets in contact with your skin or clothes, immediately wash with soap and rinse with water. If acid enters eyes, immediately rinse the eyes with running cold water for at least 20 minutes and get medical attention immediately.
- Never smoke or allow sparks or flame in vicinity of battery or engine.
- Do not drop metal tools on the battery. The resulting sparking or short-circuit on the battery or other electrical part may cause explosion.
- Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery produces a short circuit current high enough to weld a ring or the like to metal, causing severe burns.

Introduction

NOTE: Inverters demand high current from the low voltage DC Energy Source, like a battery for instance, and due to this fact should NOT be connected to the load output terminals of charge controllers (normally used in PV systems, for instance). Inverters have to be connected directly to the battery poles as indicated in this Manual.

1. Features

This power inverter represents the most advanced DC to AC conversion technology. It comes with a number of outstanding features, such as:

- Pure sine wave output (THD < 3%@ linear load).
- An intelligent solar charge controller and battery management system.
- High frequency technology, light and small.
- Input & output completely insulated design.
- High efficiency: max 90% Capable of driving inductive & capacitive loads from the start moment.
- LED indicators display all operation status.

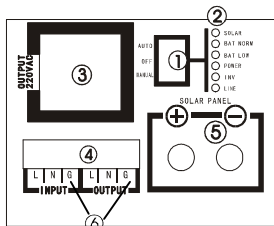
- Temperature controlled cooling fan.
- Built in advanced micro-processor resulting in user friendly interface.
- Protection: Input low voltage, input over voltage, overload and short circuit, over temperature.

2. Electrical performance

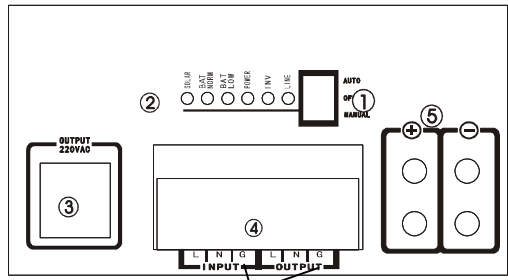
Model		LMI-1	LMI-3	LMI-5	LMI-10	LMI-15	LMI-20	LMI-30	LMI-40	LMI-50
Power Rating (W)		100	300	500	1000	1500	2000	3000	4000	5000
Battery Voltage (V)		12/24				12/24/48			24/48	
Solar Panel	Maximum Voltage (V)	25/50				50			100	
	Maximum Current (A)	20				40			40	
MPPT Function		user option								
Inverter Output	Voltage (V)	220±3%								
	Frequency (Hz)	50±0.5								
	Wave Form	pure sine wave								
	THD (%)	≤ 3% for linear load, < 5% for nonlinear load ,all of them in full load condition								
	Dynamic Response	< 10								
	Time (ms)									
	Efficiency (%)	Max 90%								
	Overload Capacity	overload 120% or short circuit automatically shut off the inverter, 1 second after automatic restart the inverter								
Line complementary Input		220V/50Hz/60Hz								
Line complementary output		DC priority design ,when battery voltage is too low, the inverter output is turned by line bypass output to load								
DC Output	USB Power Supply	User option								
	12V DC Power Supply									
Operating Temperature(°C)		-40 — +50								
Type of Cooling		temperature control forced ventilation								
Relative Humidity (%)		0-90% non-condensate								
Indication LED Indicator		solar panel (blue), battery normal (yellow , when battery capacity left 10% ,the yellow LED will flash), battery failure(red), power start (green/red ,if you use manned ,the green LED light ,if you use atomic ,the red LED light), inverter normal (yellow), line normal (green)								
Protection Function		output overload and short circuit, battery low voltage and over charging protection, solar panel Polarity reverse connect protection, overheating protection, lightning protection								
Cooling		By automatic control fan cooling								
Physical Size (LW×H)(cm)		14*9*3	23.8*12.6*9.5			45*25*11.3			63*25*13.8	
Net Weight (Kg)		0.3	2.3	2.6	2.8	4.5	4.9	6.8	7.5	8.5

3. User Interface Overview

3-1.FrontPanelComponents



300w-1000w



1500w-5000w

① Main Switch

- OFF position : Inverter is closed
- AUTO position: Inverter output is in automatic status. When battery energy is exhausted, the inverter output will be turned to bypass output. If the battery capacity is charged normal level, the output will be turned to inverter output from bypass output. Or, when battery is normal, the output is over load, the inverter will closed in a short time, then, inverter will restart output.
- MANUAL position: switch in this position, when the output is over load, or the battery energy is exhausted, the inverter will be closed. At this situation, if you want to restart the inverter, it need turn the switch to the OFF position, then, you turn the switch to the MANUAL position.

② LED Indicator

- SOLAR: Green LED. When solar panel power is normal, the LED will be lighted.
- BAT NORM: Yellow LED. When battery capacity is above 10%, the LED will be lighted. If the battery capacity is less 10%, the LED will be flashed.
- BAT LOW: Red LED. When the battery capacity is near to 0%, the RED LED will be lighted. If inverter is working in AUTO mode, the machine will turn to bypass city power. If the inverter is working in MANUAL mode, the machine will be close, no output.
- POWER: Green & Red LED. If the machine is working in MANUAL mode, the Green LED will be lighted. If it is working in AUTO mode, the Red LED will be lighted.
- INV: Yellow LED, If the inverter is working normally, this LED will be lighted.
- LINE: Green LED, when the city power is input the machine, the LED will be lighted. This input city power will supply the bypass output.

③ Universal AC socket

This AC socket will supply power to your equipments that it must have an AC plug. This socket can load maximum 10Amp AC currents.

④ Input & Output Terminal Block

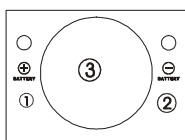
The all of our products supply a terminal block for your equipments. You can connect your equipments reliable from here.

⑤ Solar Panel Connector (MC4 Type) less than 1000W our machines, we design 2 MC4 connectors. One can load maximum 20A DC currents. From 1500W to 5000W our machines, we place 4 MC4 connectors. It can load total maximum 40A DC currents.

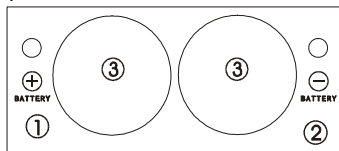
⑥ Ground terminal G: Also it can be used as chassis ground terminal, you need use a 1mm² leadwire (for 1KW inverter), 2.5 mm² leadwire (for 1.5KW-3KW), 2.5

mm² leadwire (for 4KW-5KW). It is used for connecting the case of the inverter to a grounding rod or bar.

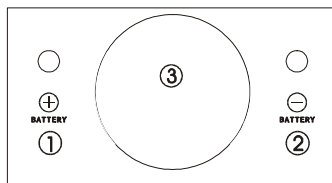
3-2.RearPanel Components



300W-1000W



1500W-3000W



4000W-6000W

- ① Battery positive pole
- ② Battery negative pole
- ③ The cooling fan: Be sure to keep it for at least 1 inch distance from the surroundings.

The fan is controlled according to temperature.

Attention: When you connect to 12VDC/24VDC/48VDC battery or other power source, you must confirm the correct polarity: \oplus is positive, \ominus is negative. Reverse polarity connection may damage inverter permanently.

Installation and user instructions

1. Where to install

The inverter should be installed in a location that meets the following requirements:

- Dry- Do not allowed water to drip or splash into the inverter.
- Cool- Ambient air temperature should be between -20 and 40℃.
- Safe - Do not install into a battery compartment or other areas where flammable fumes may exist, such as fuel storage areas or engine compartments.
- Ventilated - Allow at least one inch of clearance around the inverter for air flow. Ensure the ventilation openings on the rear and front of the unit are not obstructed.
- Dust- Do not installing the inverter in dusty environments. This dust can be pulled into the unit when the cooling fan is operating.
- Away from batteries-Do not mount the inverter where it will be exposed to corrosive gases produced by batteries.

2. Installation

2-1.Before installing the inverter, make sure the main switch is in “ OFF ” position.

2-2.DC Input connection:

We recommend the DC cable length should be not longer than 6 feet/1.8m, and the recommended gauge according to below indicated table:

Model	LMI-1		LMI-3		LMI-5		LMI-10		LMI-15		LMI-20		LMI-30		LMI-40		LMI-50	
Power (W)	100		300		500		1000		1500		2000		3000		4000		5000	
DC (V)	12	24	12	24	12	24	12	24	24	48	24	48	24	48	48	96	48	96
Cable(mm ²)	4	2	5	3	16	8	25	12	20	10	50	25	40	20	30	15	40	20

Crimp the DC cable with the ring terminals which are included in the package of the inverter, then fasten these to the inverter DC connector with as crew driver.

WARNING: *Wrong polarity connection may damage the inverters without the internal fuse protection.*

WARNING: *Make sure the connections are very well made, or overheating and fire may occur.*

WARNING: *The installation of a fuse must be on the positive conductor. Otherwise it may cause damage to the inverter and will void the warranty. It must be operated professional man to change the fuse.*

2-3. Plug the AC load plug to the inverter AC outlet.

The AC output ground wire must be connected to the grounding post of your loads (for example, a distribution panel ground bus).

WARNING: *Risk of electronic shock! Never plug the AC plug in or out while the Main-switch in ON position.*

WARNING: *Operation of the inverter without a proper ground connection may result in electrical shock hazard.*

2-4. Use of an internal Charge Controller Low Voltage Disconnect (LVD) to control the battery Depth of Discharge (DOD)

Protection and troubleshooting

1. Battery low voltage

Charge battery or check the connection, when the input voltage raise to 13/26/52 VDC, if the inverter is in AUTO mode, inverter will resume operation, if the inverter is in MANUAL mode, inverter will be operated by hand.

2. Battery high voltage

Check the battery voltage, when the input voltage goes below 15/30/60 V, the inverter will automatically and resume operation.

3. Over load and short circuit protections

Check the AC wiring, or overload or short circuit protection, reduce the load, when entering protection 'status': turn off the inverter, then turn on again to reconnect the AC output.

4. Over temperature protection

Improve the ventilation, or reduce the ambient temperature, when the inverter interior temperature returns below 45, the inverter resumes normal operation.

WARNING: *Do not open or disassemble the Inverter. Attempt to service this unit by yourself may result in risk of electrical shock or fire hazard.*

Maintenance

Very little maintenance is required to keep you r inverter operating properly. You should clean the exterior of the unit periodically with a damp cloth to prevent accumulation of dust and dirt. At the same time, tighten the screws on the DC input terminals.

Warranty

■ We warrant this product against defects in materials and workmanship for a period of 12

months from the date of purchase and will repair or replace any defective Power Inverter then directly returned, postage paid, to us.

■ This warranty will be considered void if the unit has suffered any obvious physical damage

or alteration either internally or externally and does not cover damage arising from improper use such as plugging. Connecting the unit into an unsuitable power sources and attempting to operate products with excessive power consumption requirements, or use in unsuitable environments will result in loss of warranty.

■ This is the only warranty that the company makes. No other warranties express or imply including warranties of merchantability and fitness for a particular purpose.

■ Repair and replacement are your sole remedies and the company shall not be liable for damages, whether direct, incidental, special or consequential, even though caused by negligence or other fault.